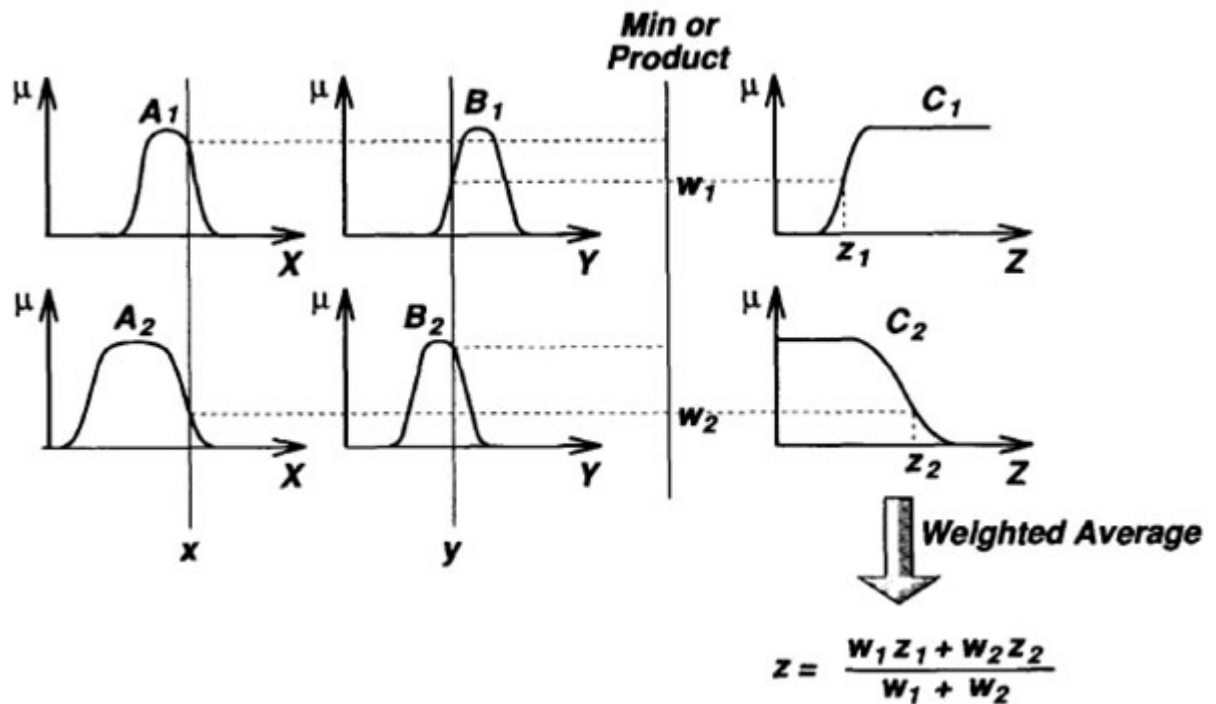In the **_Tsukamoto fuzzy models_**, the consequent of each fuzzy if-then rule is represented by a fuzzy set with a monotonicalmembership function, as shown in Figure 1. As a result, the inferred output of each rule is defined as a crisp value induced by the rule's firing strength. The overall output is taken as the weighted average of each rule's output. Figure 1 illustrates the reasoning procedure for a two-input two-rule system.

$$z = \frac{w_1 z_1 + w_2 z_2}{w_1 + w_2}$$

Figure 1: The Tsukamoto fuzzy model

Since each rule infers a crisp output, the Tsukamoto fuzzy model aggregate each rule's output by the method of weighted average and thus avoids the time-consuming process of defuzzification. However, the Tsukamoto fuzzy model is not used often since it is not as transparent as either the Mamdani or Sugeno fuzzy models. The following is a single-input example.